

WHAT IS CLAIMED IS:

1. A method for mixing nucleic acid with a water insoluble medium and application thereof, comprising the following steps:

dissolving nucleic acid in a first solvent to form a first mixture;

dissolving a water-insoluble medium in a second solvent to form a second mixture;

adding intermediate solution to the first mixture; and

mixing the first mixture having intermediate solution with the second mixture to form a third mixture;

wherein the medium is an inert medium and is not deteriorative to nucleic acid,

and

wherein the intermediate solution increases solubility between the first mixture and the second mixture.
2. The method as claimed in claim 1, wherein the water-insoluble medium comprises a polymeric substance.
3. The method as claimed in claim 2, wherein the polymeric substance is selected from a group consisting of polypropylene (PP), polycarbonate (PC) and polystyrene (PS).
4. The method as claimed in claim 1, wherein the second solvent comprises an organic solvent.
5. The method as claimed in claim 4, wherein the organic solvent is selected from a group consisting of chloroform, dichloromethane or benzole solvent.
6. The method as claimed in claim 5, wherein the benzole solvent comprises xylene or toluene.
7. The method as claimed in claim 1, wherein the intermediate solution comprises an organic solvent.

8. The method as claimed in claim 7, wherein the organic solvent is selected from a group consisting of ethanol, acetone and their mixture.
9. The method as claimed in claim 1, wherein the intermediate solution is added to a final concentration of between 5 and 50% of the water-insoluble medium.
10. The method as claimed in claim 1, wherein the first solvent comprises a water-soluble solution.
11. The method as claimed in claim 10, wherein the water-soluble solution is selected from a group consisting of water, PBS buffer and TE buffer.
12. The method as claimed in claim 1, wherein the nucleic acid is selected from a group consisting of natural and synthetic nucleic acid.
13. The method as claimed in claim 12, wherein the synthetic nucleic acid is selected from a group consisting of synthetic vector and nucleic acid fragment.
14. A water insoluble medium with nucleic acid, said medium is prepared from the method according to claim 1.
15. The method as claimed in claim 1, further comprising labeling solid article or substance with the third mixture containing said nucleic acid and drying the labeled solid article or substance.
16. The method as claimed in claim 1, further comprising mixing and labeling liquid article or substance with the third mixture containing said nucleic acid.